Chapter 4

Developing market-based financing to fund recovery from the COVID-19 pandemic

There are several barriers to the development of bond markets in Emerging Asia. This chapter discusses these barriers and presents policy options for overcoming them. First, in countries with less-developed markets, institutional and legal frameworks are still limited. In these markets, levels of investor protection, and of transparency around tax processes, remain insufficient. In countries with more advanced capital markets, there is scope to further diversify the investor base and improve secondary-market liquidity. In parallel, regional initiatives continue to support bond market development. Second, increasing financial literacy could promote more participation in the market. The digital component should be integrated into the relevant frameworks to enhance financial literacy. Finally, a strong macroprudential framework is another enabling factor for bond market development. Policy makers need to give special attention to the interactions between the financial sector and the real economy. Furthermore, macroprudential policy will be key for the stabilisation of cross-border capital flows post-pandemic.

Introduction

Emerging Asia's economies need to persevere in developing their domestic capital markets in order to pave the way for a robust and inclusive recovery from the COVID-19 pandemic (see Chapter 3). The region's bond markets have grown substantially in the last two decades. However, gaps remain in terms of access and depth. In many cases, the diversity of the investor pool is limited. In light of prevailing conditions, this chapter examines the underlying challenges that hamper the development of the bond market in the region, and offers potential policy solutions.

The discussion in this chapter begins by providing a general overview of trends in the development of the bond market in Emerging Asia. It then analyses issues relating to barriers to entry and market infrastructure. In so doing, it takes account of the plight of the small firms that are typically left out of the picture. Then, issues regarding investor participation, including with regard to retail investors, are discussed in detail, along with a review of specific policy areas for intervention, in line with the goal of boosting the supply of credit. Next, the chapter presents a range of options for strengthening financial literacy, both in the spirit of nurturing a well-informed investor base, and in light of the growing digitalisation of financial markets. Finally, the chapter looks at the stability of financial markets, with a view to encouraging the sustainable development of capital markets, and with due consideration to the risks that hover on the horizon.

Developing bond markets to foster capital market-based solutions

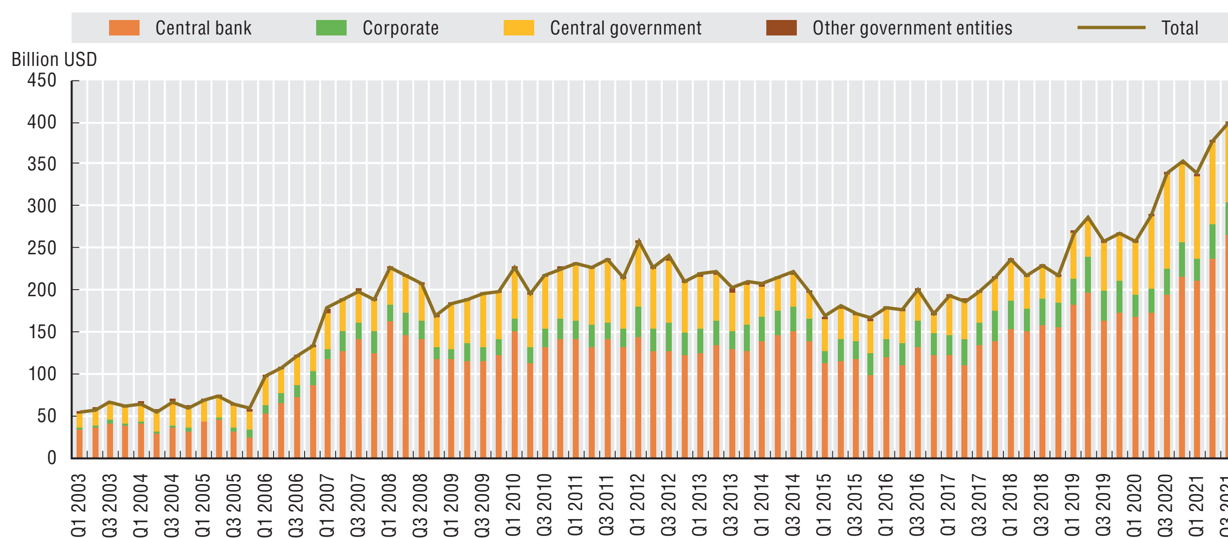
Emerging Asia's bond markets have deepened substantially, but remain uneven and restrictive

Bond issuance in Emerging Asia has grown significantly over the past two decades. The amount of local-currency bonds issued in the member countries of the Association of Southeast Asian Nations (ASEAN) for which data are available increased to approximately USD 399 billion at the end of the third quarter of 2021, from around USD 55 billion in early 2003 (Figure 4.1). As the bond market has grown, issuance by governments, government-affiliated entities and corporations has also progressed.

Various policy initiatives have supported the growth of bond markets. These include significant improvements to market infrastructure, notably to clearing and settlement systems, and also to legal frameworks. At the same time, some aspects of Emerging Asia's bond markets remain relatively underdeveloped. In particular, a small number of domestic institutional investors with similar investment strategies accounts for a largely dominant combined share of the overall investor base, thereby constraining liquidity (see below for an overview of the main barriers to the further development of bond markets in Emerging Asia).

Aggregate data that depict a growing bond market do, however, mask considerable disparity across economies. Bond markets account for a larger share of gross domestic product (GDP) in countries with more advanced capital markets such as Malaysia and Singapore, amounting to 125.2% and 115% of GDP, respectively, in Q3 2021 (Figure 4.2). Bond markets are also relatively large in Thailand, at around 86% of GDP. In contrast, bond markets in Indonesia and Viet Nam remain very small, equating to less than 30% of these countries' GDP as of Q3 2021 (Figure 4.2).

Figure 4.1. **Local-currency bond issuance in selected ASEAN countries by issuer type, Q1 2003 to Q3 2021**



Note: The ASEAN total is the sum of local-currency bond issuance volumes in Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam.

Source: Authors' elaboration based on data from ADB (n.d. a).

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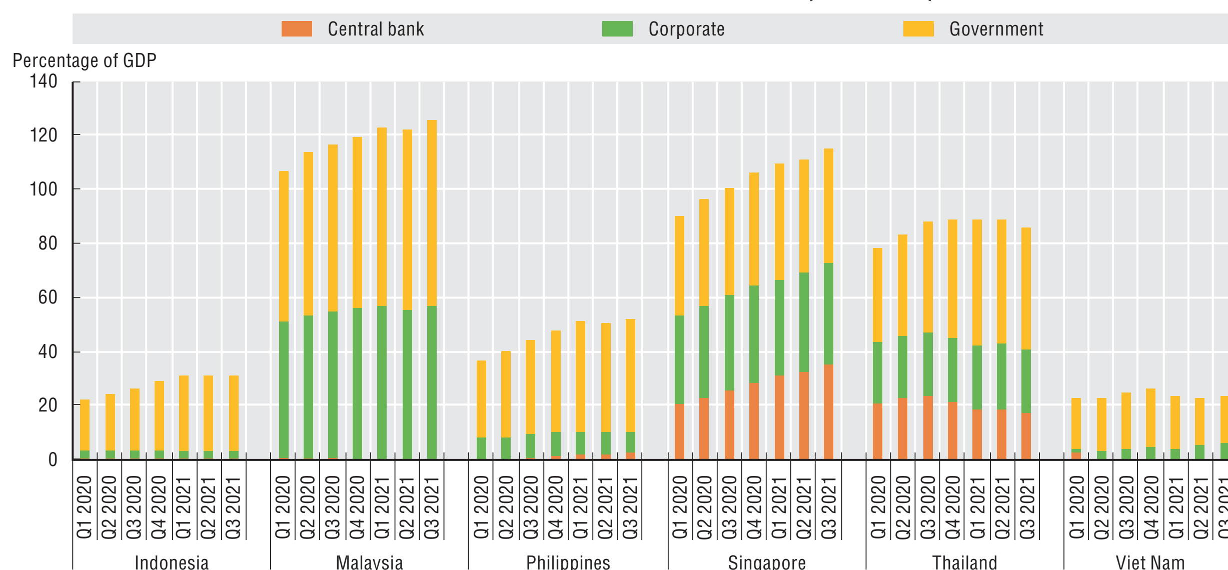
Figure 4.2. **Outstanding amount of local-currency bonds by issuer type in selected Emerging Asian economies, Q1 2020 to Q3 2021 (% of GDP)**



Note: Government bonds include treasury bonds and bills, savings bonds, local government bonds, central government bonds, and policy bank bonds. Corporate bonds are mainly those of state-owned and private corporate entities, and also include medium-term notes, commercial paper, and bonds issued by financial institutions.

Source: Authors' elaboration based on data from ADB (n.d. a).

StatLink https://doi.org/10.1787/888934304875

In Korea and Malaysia, which have relatively well developed bond markets, Shimizu (2018) notes that laws, regulations and market infrastructure have built up as a result of ongoing market-development efforts since before the Asian financial crisis of 1997, and there are many bond issuers and investors. Malaysia's bond market benefited from public and private initiatives in the 1990s and early 2000s. These included the establishment of credit rating agencies in the early 1990s. Among other initiatives, there was also the introduction of real-time gross settlements in 1999, and of a disclosure-based regulatory framework in 2000 (bin Ibrahim and Wong, 2006). Meanwhile, in the Philippines and Indonesia, the issuance of corporate bonds started in earnest only in the mid-2000s. Policy measures to develop the market have not been implemented to a sufficient extent, issuers and investors remain limited in number and scope, and the countries' financial systems continue to face structural problems (Shimizu, 2018).

There is scope to reduce barriers to participating in bond markets in Emerging Asia

At present, the goal of broadening the participation of issuers and investors in Emerging Asia's bond markets faces a range of different barriers, and these differ substantially among Emerging Asian countries (Table 4.1). For instance, in countries like Cambodia, Lao PDR and Myanmar, whose bond markets are at an early stage of development, basic institutional and legal frameworks are still in the process of being established. In these markets, levels of investor protection, and of transparency with regard to tax processes, remain insufficient. In other countries with more advanced capital markets, meanwhile, there is still scope to diversify the investor base. Among other areas in which there is room for improvement in these more advanced markets is the level of liquidity in secondary markets, which has scope for further enhancement.

Table 4.1. **Summary of main obstacles to bond-market development in selected Emerging Asian economies**

Country	Main obstacles identified
Brunei Darussalam	Limited investor base; limited development of financial infrastructure
Cambodia	Absence of benchmark government bonds; limited investor base; financial reporting standards not fully aligned with international standards; limited development of financial infrastructure; limited capital market expertise; insufficient clarity around tax processes
Indonesia	Limited investor base; insufficient regulatory framework for private placements; listing only for publicly offered debt securities
Lao PDR	Absence of benchmark government bonds; limited investor base; insufficient liquidity in the secondary market; lack of a market-making function; financial reporting standards not fully aligned with international standards; limited capital market expertise
Malaysia	Limited investor base; financial reporting standards not fully aligned with international standards
Myanmar	Limited investor base; limited capital market expertise; insufficient clarity around tax processes; insufficient investor protection
Philippines	Limited investor base; insufficient liquidity in the secondary market
Singapore	Limited investor base; financial reporting standards not fully aligned with international standards
Thailand	Limited investor base; limited hedging opportunities; financial reporting standards not fully aligned with international standards
Viet Nam	Limited investor base; insufficient liquidity in the secondary market; limited regulatory capacity; insufficient disclosure requirements; lack of credit rating agency services; insufficient regulatory framework for private placements
People's Republic of China	Insufficient liquidity in the secondary market; insufficient regulatory framework for private placements; inconsistencies between regulatory mechanisms applicable to various trading venues
India	Limited investor base; insufficient liquidity in the secondary market

Note: The severity of each issue listed as a barrier may depend on the level of development of bond markets in each country.

Source: Authors' elaboration based on ADB (n.d. b).

The scope for policy to help develop and improve bond markets in the region includes increasing sovereign bond issuance, promoting a diverse range of investors, and easing trading and post-trading processes. Equally important is the consistent implementation of information disclosure and transparency requirements, and the agility of institutional and regulatory frameworks in keeping abreast of market developments.

Strengthening benchmarking and improving the price-discovery process

Benchmark securities, which are typically sovereign bonds, provide a yardstick for fixed-income assets. They are important in reducing adverse selection costs in the market, which are costs arising from buyers and sellers not having the same information, and in facilitating liquidity flows by acting as hedging instruments. Making sure that benchmarking works well is an important consideration for financial markets in emerging economies, especially those that are at an early stage of development, as it renders conditions more attractive to investors (Nagano, 2018; Mizen and Tsoukas, 2013).

Against this backdrop, Emerging Asian countries such as Indonesia and Thailand continue to strengthen benchmarking by establishing supportive price discovery mechanisms in their bond markets (Box 4.1). Moreover, the significance of benchmarks holds true for foreign-currency denominated securities as much as it does for ones that are denominated in local currency. For instance, the Ministry of Finance of the People's Republic of China (hereafter "China") announced in June 2017 that it would issue USD 2 billion in dollar-denominated sovereign bonds, split equally into five-year and ten-year maturities. Among the reasons for issuing USD-denominated bonds in this instance, the Chinese finance ministry cited its intention to provide a pricing benchmark for other bonds from Chinese issuers (Zhang and Desai, 2017).

Box 4.1. **Initiatives to support the price discovery process in Indonesia and Thailand**

In 2018, Indonesia's central bank introduced overnight index swap and interest rate swap instruments to provide further support both to banks and non-financial corporations in managing their liquidity and market risk. Another part of the rationale for this initiative is to support the formation of the yield curve, and improve the effectiveness of the price discovery process in the money and bond markets. Since the overnight index swap has a reputation for being a nearly risk-free asset, the further development of this market segment should provide a benchmark yield curve based on real transactions rather than on price quotations.

In Thailand, meanwhile, policy makers have also sought to improve the price discovery process in the bond market. Measures in this regard have included making advance issuance schedules available to the public in order to ensure certainty of funding for the government, as well as efficient fund management. As a result, the government issues securities in regular amounts and across maturities, ranging from 1 to 20 years. Furthermore, using bidding yields that are quoted daily by 14 primary dealers, and at a minimum value of 20 million Thai baht (THB), has facilitated the development of a Government Bond Yield Curve. Additionally, the Thai Bond Market Association publishes reference yields of state-owned enterprises, Financial Institutions Development Fund bonds, and treasury bills. Since 1999, yield curve information has been available to the public on a daily basis. In addition to developing the yield curve, the Thai Bond Market Association has also built a bond index as a tool to track market performance, and to serve as a better benchmark.

Box 4.1. **Initiatives to support the price discovery process in Indonesia and Thailand** *(cont.)*

In addition, a system of primary dealers now supports government bond auctions and government bond trading activities, both for private and public securities, and to facilitate Bank of Thailand's own conduct of open market operations. Primary dealers are responsible for acting as market-makers for government securities, participating in government securities auctions. In addition, primary dealers also have an obligation to submit reference yields on government securities to the Thai Bond Market Association at the end of each trading day.

Source: Authors' elaboration based on Damayanti et al. (2020) and ThaiBMA (n.d.).

At the other end of the spectrum, sovereign bond issuance remains relatively limited in Lao PDR, Myanmar, and particularly Cambodia. In Cambodia corporate bonds are currently the only type of debt securities listed on the Cambodia Securities Exchange, as no government bonds have been so far issued by the Cambodian government (CSE, n.d.). There are reports, however, that the government of Cambodia is planning to issue USD 300 million worth of sovereign bonds, after the Law on Government Securities was adopted in December 2020 (White, 2021).

Broadening the investor base is crucial to ensuring the success of sovereign bond markets

Furthering the development of bond markets in Emerging Asia requires less cumbersome tax procedures, and fostering a stable domestic investor base. This includes streamlining the regulatory environment for institutional investors such as insurance corporations and pension funds. Moreover, there is scope to facilitate more direct participation on the part of retail investors to increase market liquidity and diversify the investor pool.

Improving and clarifying tax processes

Clarity of the taxation concepts and practices that apply to the capital market is important to potential investors. This is especially the case when it comes to capital gains and withholding taxes. In some Emerging Asian countries, the transparency of tax processes still needs to improve. In Cambodia, for instance, provisions regarding tax incentives in the securities sector only apply to listed equities. The applicability of these concessions to debt securities has yet to be confirmed or tested, leading to a "wait-and-see" approach among institutional investors (ADB, 2018a). In Myanmar, meanwhile, the tax treatment of new financial instruments, and of the activities of market participants, is in the early stages of development. Market participants, including regulatory authorities, may therefore only have limited expertise in this field (ADB, 2018b).

In addition, tax incentives could also play a major role in the continuous growth of bond markets. For example, Malaysian authorities have granted stamp-duty waivers and tax exemptions for income earned on securities, in order to broaden the investor base. Furthermore, Malaysia has implemented a tax-neutral framework, which treats asset-backed and Islamic securities like conventional securities for taxation purposes (bin Ibrahim and Wong, 2006).

Encouraging more investor participation, in particular from retail investors

Most countries in Emerging Asia have a relatively well-developed institutional investor base. On the other hand, some countries in the region still lack a sound and diversified base of institutional investors. In Cambodia, for instance, pension funds and insurance companies continue to keep cash in bank accounts rather than invest in the bond market. As the majority of pension and insurance premium receipts in Cambodia are denominated in United States dollars, the development of a local-currency bond market is more challenging in this country (Kosintr, Shu and Benita, 2022).

Broadening the investor base to include more retail investors could further diversify and deepen the demand for bonds. For retail investors, holding bonds facilitates both a diversified investment strategy and an optimisation of a portfolio's risk-return profile. One option for improving retail participation is to make available the kinds of financial instruments that provide this class of investors with easy access. For example, regulated bond funds could be a simple and cost-effective way for retail investors to gain exposure to a diversified portfolio of bonds.

Additionally, FinTech solutions such as blockchain-based and digital crowdfunding platforms may have a useful role to play when it comes to mobilising domestic savings for investment in the bond market. For instance, FinTech solutions could allow small-scale retail investors to purchase bonds using their mobile phones, thus providing investment opportunities to people who would typically have neither the means nor the expertise to invest in bonds (ADB, 2021).

Interestingly, even large globally established firms have started to capitalise on these emerging technologies. For example, the European Investment Bank issued its first digital bond using blockchain technology in April 2021, raising 100 million euros (EUR) on the Ethereum platform (Knight, 2021).

Improving market infrastructure and the post-trading environment

Robust market infrastructure is crucial for the efficient functioning of capital markets. In order for bond markets to function properly, reliable and efficient financial sub-structures, including clearing and settlement systems, need to be developed and supported by a sound legal and regulatory system. A real-time and high-value gross settlement system is a vital building block, particularly for bond markets, in which transactions typically have very large sizes. In addition, an internationally compatible clearing and settlement system is needed in order to facilitate cross-border transactions of bonds among Emerging Asian countries (Park and Rhee, 2006).

This is particularly important in the countries in Emerging Asia whose bond markets are still nascent. For instance, no real-time gross settlement system exists in Cambodia as of 2018, and payments are typically made via cheque (ADB, 2018a). In Lao PDR, a gross settlement system was launched in 2011, but it only became real-time in 2019. However, more progress needs to be achieved with respect to the clearing of cheques. This operation is currently manual in Lao PDR, with clearing meetings being held at provincial levels, which render the clearing of an interbank and interprovincial cheque a rather complicated process (UNESCAP, 2021).

On the other hand, countries such as Malaysia, the Philippines and Thailand established sound market infrastructures as far back as in the late 1990s and early 2000s (Box 4.2). Under the auspices of the Cross-Border Settlement Infrastructure Forum, the ASEAN+3 economies have also been working on a regional cross-border settlement infrastructure, in order "to ensure the safety of settlement-connecting financial market infrastructures" (ADB, 2020).

Box 4.2. **Initiatives to develop market infrastructure in Malaysia, the Philippines and Thailand**

In order to enhance cost-effectiveness and efficiency, Malaysia's central bank, Bank Negara Malaysia, set up a number of computerised processes, making them available online. This included the launch, in September 1996, of the Fully Automated System for Tendering, in order to expedite securities tendering and deliver a real-time gross settlement system. In 1999, it also launched the Real-Time Electronic Transfer for Funds and Securities System in a bid to reduce settlement risk. Another important milestone was the introduction, in October 1997, of the Bond Information and Dissemination System to facilitate efficient trading and promote transparency of information with regard to domestic debt securities. For the Islamic sukuk market, meanwhile, an Internet-based platform – the Islamic Interbank Money Market – was set up in September 2004, in order to enhance transparency on Islamic financial products.

For its part, the central bank of the Philippines (Bangko Sentral ng Pilipinas) has provided strong support for the efforts of the Banking Association of the Philippines and other industry associations to establish the country's Fixed Income Exchange (FIE). The FIE commenced operations as an inter-dealer platform in March 2005, and it has three main objectives. The first of these is to ensure that securities are properly delivered to the purchaser, or to the designated third-party custodian. The second goal is to institutionalise this system of third-party custodians, which dates from 2004, and which protects investors by separating the functions of dealing and custodianship of securities. Third, the FIE aims to facilitate the migration from over-the-counter trading to a formal trading arrangement that enhances transparency and price discovery.

Working together with various government agencies such as the Securities and Exchange Commission and finance ministry, the Bank of Thailand implemented several measures to establish sound market infrastructures in the country. One such initiative was to develop an efficient clearing and settlement system to support the execution of trades at front offices. The Bank of Thailand is responsible for the settlement of public debt securities, acting as both depository and registrar. The majority of government bonds are issued in bearer form, and are settled by physical delivery at the central bank. Meanwhile, corporate bonds are cleared and settled at the Thailand Securities Depository, and are transferred on a book entry basis. The Bank of Thailand has also developed a delivery-versus-payment system, with the aim of reducing settlement risk. Known as BAHTNET II, this system commenced operations at the end of 2001.

Source: Authors' elaboration based on World Bank (2020), Espenilla (2006) and Chabchitrchaidol and Permpoon (2002).

Regional initiatives to develop bond markets in Emerging Asia

In order to enhance the development of local financial markets across the region, a number of multilateral initiatives were established in the aftermath of the Asian financial crisis of 1997-98 (Table 4.2). As early as September 2001, ASEAN+3 policy makers worked together with domestic credit rating agencies within the region to form the Association of Credit Rating Agencies in Asia (ACRAA) in 2001. With support from ASEAN+3, ACRAA assisted its members in adopting best practices and common standards to improve members' rating quality and the comparability of ratings throughout the region. ACRAA members also met on a regular basis to exchange ideas, experiences, and information on new developments with regard to rating practices and standards (ADB, 2017b).

Table 4.2. **Key multilateral initiatives to support the development of bond markets in Emerging Asia**

Date	Description of initiative
September 2001	Establishment of the Association of Credit Rating Agencies in Asia to assist the member countries of ASEAN+3 in adopting best practices and common standards in order to improve members' rating quality, and the comparability of ratings throughout the region.
December 2002	Launch of the Asian Bond Market Initiative by ASEAN+3 countries in order to develop local-currency bond markets, to promote regional financial co-operation and integration, to strengthen financial stability, and to reduce the region's vulnerability to a sudden reversal of capital flows.
July 2003	Launch of the first Asian Bond Fund, ABF 1. This fund invested USD 1 billion in USD-denominated bonds issued by sovereign and quasi-sovereign entities in eight of the eleven EMEAP economies (excluding Australia, Japan and New Zealand).
December 2004	Launch of ABF 2, which invested USD 2 billion in local-currency denominated bonds issued by sovereign and quasi-sovereign entities in eight of the eleven EMEAP economies (excluding Australia, Japan and New Zealand).
2008	Launch of a new medium-term roadmap under the auspices of ABMI, and focusing on activities in four areas. The first of these was to promote the issuance (supply) of local-currency bonds. The second was to facilitate demand for local-currency bonds. The roadmap's third goal was strengthening the regulatory framework. The fourth was to improve bond-market infrastructure.
May 2010	Establishment of the Asian Bond Market Forum (ABMF) as a common platform to foster a standardisation of market practices, and a harmonisation of regulations relating to cross-border bond transactions in the region.
2012	Launch of a subsequent roadmap under the auspices of ABMI, taking further aim at the four main areas of focus in the 2008 roadmap.
2015	Establishment of the ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF), again under the auspices of the ABMI. Its aim was to create a nexus among domestic professional local-currency bond markets in the region, in order to help facilitate intra-regional transactions through a standardisation both of the issuance of bonds and notes, and of investment processes more generally.
May 2016	Launch of the ABMI's Medium-Term Roadmap 2016-18.
May 2019	Launch of the ABMI's Medium-Term Roadmap 2019-22.
May 2021	The 24th ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting acknowledged the continuing progress of the ABMI under the ABMI Medium-Term Roadmap 2019-2022.

Note: This list is not exhaustive.

Source: Authors' elaboration based on ADB (2017b) and various national sources.

In 2003 and 2004, EMEAP[1] established the Asian Bond Funds 1 and 2, as noted above. The aim of these funds was to support the development of regional bond markets, and to retain some of the region's foreign currency reserves in local investments. A further aim of these funds was to promote the private sector's participation in local-currency bond markets by enhancing information disclosure and governance standards, with ongoing monitoring undertaken by the EMEAP's Working Group on Financial Markets. Other objectives of the initiative were to provide a low-cost product in the form of passively managed index bond

funds, to broaden investor participation, and to act as a catalyst for regulatory reforms and improvements to market infrastructure (ADB, 2017b).

In launching the Asian Bond Market Initiative at the end of 2002, the ASEAN+3 countries sought to develop local-currency bond markets, and to promote regional financial co-operation and integration. The initiative aimed, as noted above, to strengthen financial stability, and to reduce the region's vulnerability to any sudden reversal of capital flows. The scope of the ABMI's work has continued to expand since its launch, with the release of a new roadmap in May 2008, and the establishment of the Asian Bond Market Forum in 2010 to foster a standardisation of market practices, and a harmonisation of regulations relating to regional cross-border transactions. As also noted above, the 2008 roadmap focused on four areas of activity. These were to promote the issuance, and thus the supply, of local-currency bonds, to facilitate demand for local-currency bonds, to strengthen the regulatory framework, and to improve the infrastructure of the bond market (ADB, 2017b).

In 2012, a subsequent roadmap was launched under the auspices of the ABMI, targeting the same four objectives as the 2008 roadmap. With bond markets developing rapidly in some ASEAN+3 member countries, policy makers also shifted their attention to activities that produce more tangible outcomes. These included the provision of guarantee operations under the Credit Guarantee and Investment Facility, and the development of infrastructure-financing schemes. They also included an enhancement of activities under the aegis of the Asian Bond Market Forum, introducing a common programme of bond issuance to foster a harmonisation and standardisation of regulations. Other goals were to facilitate the establishment of a regional settlement intermediary to reduce the cost of cross-border bond transactions and settlement, and to strengthen the foundation for a regional credit rating system (ADB, 2017b). Subsequently, further multi-year roadmaps were launched for 2016-18 and 2019-22 (ASEAN+3, 2019).

Other initiatives include the establishment of the ASEAN+3 Multi-Currency Bond Issuance Framework, again within the context of the ABMI. The purpose of this framework was to support intra-regional transactions through standardised processes for the issuance of bonds and notes, and for investments more generally. It did this by creating common market practices, by instituting a common document for submission, and by setting out transparent issuance procedures in the implementation guidelines for each participating market (ADB, 2015a). In May 2021, the 24th ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting acknowledged the continuing progress of the ABMI under the ABMI Medium-Term Roadmap 2019-22 (ASEAN+3, 2021).

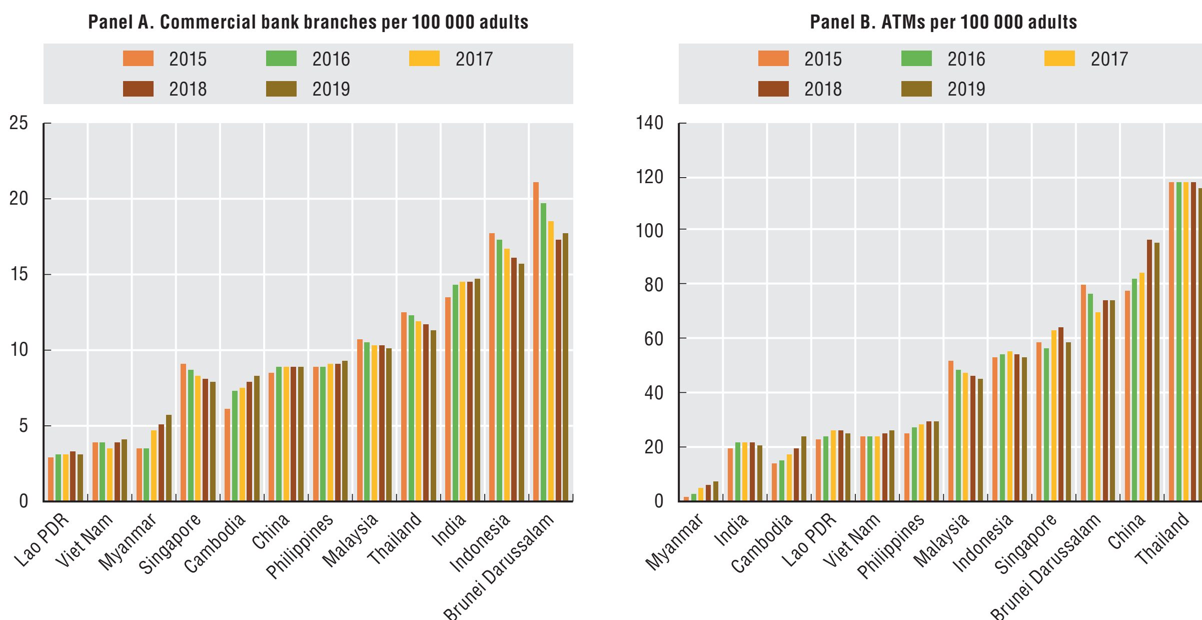
An enabling environment requires robust market infrastructure, and a financially literate potential investor base

A higher degree of participation by individual investors in Emerging Asian countries is essential for bolstering the competitiveness of bond markets, and to support financial stability more generally. Since some debt instruments are complex and difficult to grasp, especially for financially unsophisticated investors, policies that improve the overall level of financial literacy could promote more participation in the market. The majority of Emerging Asian countries currently display lower levels of financial literacy than the average for the OECD. Still, policy makers in the region are aware of the challenges at hand, and financial literacy has been pursued vigorously. The digital component has slowly been integrated into the relevant frameworks, resulting in an increasingly comprehensive strategy for achieving digital financial literacy.

Broadening access to finance requires stronger infrastructure

Broad access to financial markets and services relies on robust and widespread infrastructure. In this connection, the IMF's Financial Access Survey identifies two metrics that describe the state of financial access in a country, in a manner that is consistent with the United Nations Sustainable Development Goals. The first of these is the number of bank branches per 100 000 people, and the second is the amount of automated teller machines (ATMs) for every 100 000 people. Among Emerging Asian economies, the prevalence of bank branches is highest in Brunei Darussalam and Indonesia, while Lao PDR, Viet Nam and Myanmar form a clearly distinct bottom tier when applying this metric (Figure 4.3, Panel A). With regard to the second metric, Emerging Asia has an average of 48 ATMs per 100 000 people. Thailand is a clear outlier in its widespread access to cash machines, with nearly 120 ATMs per 100 000 adults, while China became the second country in Emerging Asia to surpass 80 ATMs per 100 000 adults in 2018. At the bottom of the table for access to cash machines lies Myanmar, where there are fewer than 10 ATMs per 100 000 adults (Figure 4.3).

Figure 4.3. **Number of commercial bank branches and number of ATMs per 100 000 adults in Emerging Asia, 2015-19**



Source: IMF (2021), *Financial Access Survey* database, https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C.

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According to Fitch Ratings (2020), there are about 290 million people in Southeast Asia who do not have a bank account, which corresponds to 43% of the region's population. Since bond investing relies on people having bank accounts, regions with larger numbers of people who do not have one may find issuing domestic bonds difficult and may need to pursue offshore bond issuances instead. Yet while offshore bond issuances may provide an alternative source of funding, they do require close regional, cultural, or economic ties with the host country's capital market. An offshore bond issuance must also be limited in such a way that it does not harm the domestic bond market in the host country, by competing with it to an excessive degree. As a result of limitations such as these, it may remain difficult for countries to realise the full potential of offshore bonds.

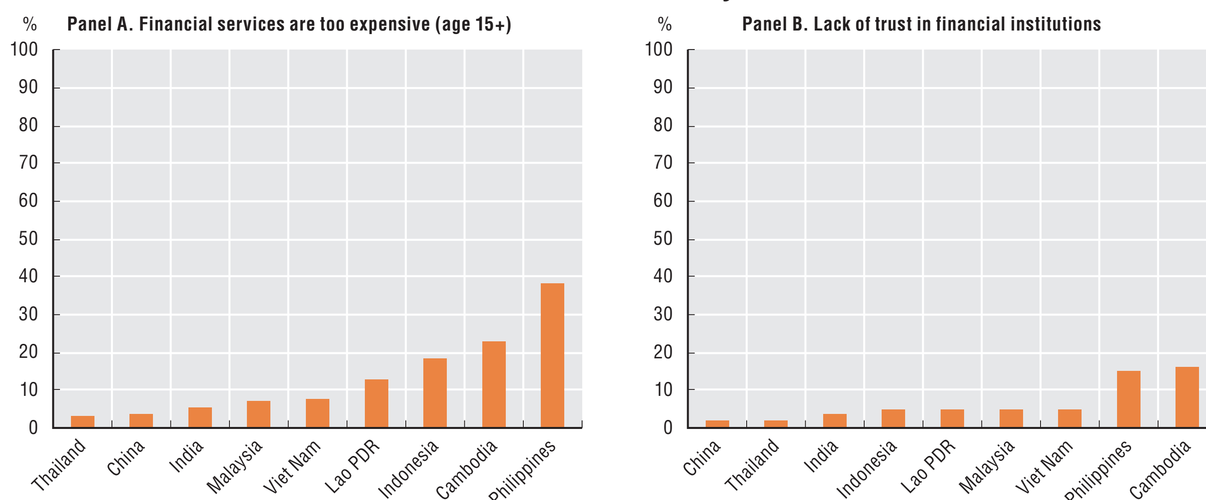
Financial services usage is a term that refers to the behavioural patterns of consumers regarding financial services. This includes the regularity and frequency of their transactions, or the length of time for which they maintain a bank account. In most Emerging Asian countries, less than 50% of the population of 15 years of age or older holds a transaction account at a financial institution. Meanwhile, access to digital financial services is becoming an increasingly important factor for increasing financial inclusion, as the Sustainable Development Goals also recognise.

Enhancing the quality of financial services will spur on their adoption, and bolster sustainable growth

The quality of financial services is a measure that refers both to their inherent design, and to the ease and effectiveness with which customers can use them. The indicators for this measure include not having an account because financial services are too expensive, and not having an account due to a lack of trust in financial institutions. They also include the ability to use financial services to get hold of emergency funds.

According to the World Bank's 2017 Findex survey, the cost of financial services has proven to be a significant barrier for consumers in Cambodia, Indonesia, Lao PDR and the Philippines (Figure 4.4, Panel A). The association between this measurement and the proportion of the adult population (age 15+) in these countries holding a financial services account is noticeable, with Cambodia, Indonesia, and the Philippines ranking well below the global median (Figures 4.4 and 4.6). Still, these countries have an opportunity to drive down the cost of financial services, and at the same time to boost financial inclusion. Areas for improvement, among others, include access cost in traditional financial institutions (e.g. account opening fees and maintenance fees), which remains prohibitive in some countries in the region, and information campaigns, which can be made more regular and systematic. It also helps that the trust in financial institutions appears strong in Emerging Asia, with only Cambodia (16%) and the Philippines (15%) reporting that more than 5% of the adult population lacks trust in financial institutions (Figure 4.4, Panel B).

Figure 4.4. **Respondents' main reasons for not having a financial account, from the World Bank's 2017 Findex survey**



Source: World Bank (2017), *The Global Findex Database 2017*, https://globalfindex.worldbank.org/.

https://doi.org/10.1787/888934304913

Financial literacy supports economic development

Broadening the investor base in capital markets requires a thorough information campaign to raise financial literacy. In general terms, financial literacy refers to individuals' awareness of the financial products that are available, and the corresponding risks that these products may involve. Enabling informed participation in financial market activities by boosting financial literacy can play a critical role in facilitating financial inclusion, promoting consumer protection, and enhancing the management of macro- and microprudential risks.

On the other hand, a number of empirical studies have shown financial illiteracy to be costly to consumers, not just due to the indirect cost of missed opportunity, but also due to the direct cost of the financial blunders that people can make as a result of their insufficient knowledge. For example, Lusardi and Tufano (2015) find that consumers who do not understand compound interest spend more money on transaction fees, carry larger debt burdens, and incur higher interest rates on loans. Furthermore, Stango and Zinman (2009) find that such people tend to borrow more, save less, and are less likely to diversify risk.

Using survey data from Viet Nam, Nguyen and Nguyen (2020) find that having a basic level of financial literacy reduces the likelihood of a person participating in financial markets, and that he or she is more likely to do so as his or her level of financial literacy progresses. The study also observes a peer effect that correlates positively with participation in financial markets, suggesting that respondents discuss financial matters with their peers, and take account of their opinions. Moreover, Yeh (2020) finds that financial literacy has a positive and significant effect on a person's awareness of his or her post-retirement financial needs, enabling him or her to compare alternatives when purchasing financial products, as well as reducing his or her tendency to experience present-time bias, and boosting the likelihood of planning for his or her retirement in a well-informed manner. The results of the latter study are relevant not only in terms of expanding the base of the capital market, but also in the context of managing the region's ageing demographics.

One obstacle in assessing financial literacy in Emerging Asia is the lack of up-to-date and comparable data across countries over time. The OECD's International Network on Financial Education survey is one of the few undertakings that attempt to provide a picture of financial literacy in Asia that allows for such comparisons. The results of the 2016 study (OECD, 2016), augmented by the work of Morgan and Trinh (2019), reveal that Emerging Asian economies for which data are available fall mostly below the average score for the OECD. Only China exceeded the OECD average score of 13.7, whereas Cambodia, India, Indonesia, Lao PDR, Malaysia, Thailand, and Viet Nam scored below the OECD average (Figure 4.5).[2]

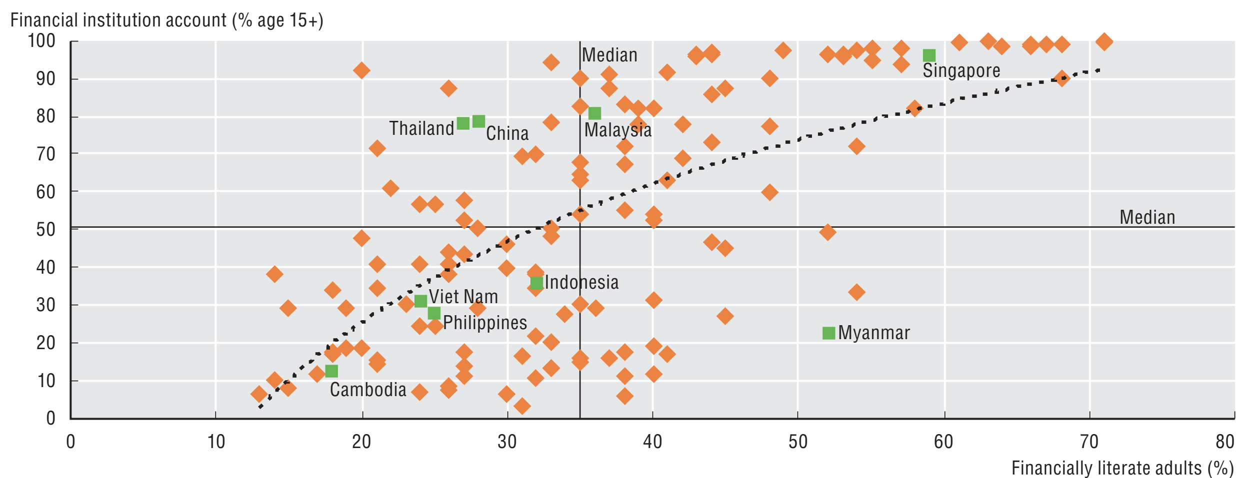
Another useful dataset, albeit an older one, is the Standard & Poor's Ratings Services Global Financial Literacy Survey in 2014, which drew on interviews with more than 150 000 adults in over 140 countries (Klapper, Lusardi and Oudheusden, 2015). The message that emerges from this data is, by and large, the same conclusion that other studies have shown. As Figure 4.5 illustrates, financial literacy in many Emerging Asian economies lags behind the global median. The figure also shows that, in general, financial literacy correlates positively with people's likelihood of holding accounts with financial institutions. In Emerging Asia, the exceptions to this trend are China and Thailand, where the rates of participation in financial markets are above the median level despite a relatively low overall rate of financial literacy (Figure 4.6).

Figure 4.5. **Total scores for financial literacy in selected economies, 2016**

Sources: Morgan and Trinh (2019) and OECD (2016).

StatLink https://doi.org/10.1787/888934304932

Figure 4.6. **Adult financial literacy and ownership of accounts with financial institutions in selected economies, 2014**



Note: The total number of countries is 141. The trend line is logarithmic.

Sources: Authors' elaboration based on Klapper, Lusardi and Oudheusden (2015) and World Bank (2021), *World Bank Global Financial Development Database*, November 2021, https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database.

StatLink https://doi.org/10.1787/888934304951

Examining changes in literacy rates in individual economies over time is also difficult because, even at the national level, data that are comparable over time are sparse. However, for countries where data are available for multiple periods, the trends are somewhat encouraging. For instance, basing their conclusions on data from Indonesia's Financial Services Authority, Hidayatinnisa et al. (2021) note that Indonesia's level of financial literacy rose to 38.03% in 2019, up from just 21.84% in 2013, and 29.66% in 2016. Similarly, recent data from the Chinese central bank show that the overall index of financial literacy for Chinese consumers increased by 2.04 points between 2019 and 2021, to reach a score of 66.81 (People's Bank of China, 2021).

A further challenge lies in understanding the links between individuals' more general cognitive abilities, and their participation in financial markets. For instance, people with lower cognitive ability may also be likely to display lower financial literacy (Box 4.3). As a result, policies that aim to improve financial literacy may not yield the results that policy makers intended when it comes to individuals with lower cognitive abilities. One option for assisting individuals with lower cognitive abilities and increasing their rate of participation in financial markets is to render financial advice more accessible and trustworthy.

Box 4.3. **Links between cognitive ability and level of participation in financial markets**

At first glance, the links between financial literacy and cognitive ability may not appear to be very straightforward. However, empirical literature on this subject has provided compelling evidence pointing to interlinkages between the two concepts, in the sense that individuals with lower cognitive capacity are also likely to display lower levels of financial literacy. For example, Andersen and Meisner Nielsen (2011), conclude that participation in the stock market by individual investors in Denmark seems to be influenced by factors like cognitive abilities and behavioural biases, in addition to the costs of financial participation. This accords with other studies that observe that individuals with lower financial knowledge and lower cognitive abilities are especially less likely to participate in financial markets (Wang, Su and Duxbury, 2021; Vaarmets, Liivamagi and Talpsepp, 2019; Grinblatt, Keloharju and Linnainmaa, 2011; Guiso and Jappelli, 2005). This tends to be the case both for direct participation in finance, and also for indirect participation through mutual funds, retirement accounts and other collective investment schemes (Christelis, Jappelli and Padula, 2010).

In particular, Grinblatt, Keloharju and Linnainmaa (2011) provide evidence that, even among the most affluent individuals, a higher intelligence quotient (IQ) increases the likelihood that a person will participate in financial markets. The authors put these findings down to the fact that individuals with high financial literacy, and high cognitive abilities, face lower costs in acquiring information, and thus encounter lower costs to financial participation than individuals with little knowledge about financial markets, and with lower cognitive abilities. Furthermore, McArdle, Smith and Willis (2009) propose several alternative mechanisms through which cognitive abilities and financial literacy could relate to participation in financial markets. For example, people's preferences with regard to spending money immediately after earning it, or at a later point in time, influence both their levels of investment in education and their saving behaviour. In addition, there is evidence that so-called self-efficacy – which has to do with people's perceptions of their ability to accomplish tasks – is a secondary source of cognitive influence on individuals' participation in financial markets. As shown by Tang (2021) in a recent study focusing on older adults in the United States, lower cognitive abilities decrease individuals' sense of self-efficacy. In turn, this considerably decreases their efficiency when it comes to financial management.

These findings have important implications for policy. Specifically, they demonstrate the need for greater effort in assisting individuals with lower cognitive abilities. The default option in these cases would be for individuals to rely on specialised entities to provide them with financial advice. The trustworthiness of financial advice is crucial: in order to invest in financial instruments, retail investors must trust their financial advisors. Policy makers in Emerging Asia need to ensure, therefore, that financial advisors act in

Box 4.3. **Links between cognitive ability and level of participation in financial markets** *(cont.)*

accordance with investors' best interests, and that they adhere to the highest standards of integrity. Using a large sample of households in the Netherlands, Lourenco, Dellaert and Donkers (2020) find that consumers' perception of trust, and of the expertise of the firm providing the financial advice, are important drivers of their accepting this advice. Other findings from this study that could have important policy implications are that people tend to trust not-for-profit firms more than for-profit ones, while computer-based advice (or "robo advice") also tends to enjoy higher levels of trust compared to person-to-person interactions.

Digital and financial literacy is an increasingly relevant policy area at the national and regional levels

In recent years, given the rapid digitalisation of financial services, financial literacy is becoming increasingly intertwined with digital literacy. Labelled as digital financial literacy, it is arguably now a critical ingredient for maximising opportunities to scale up traditional and alternative financing platforms. This is notably the case considering the need to balance key objectives such as the overall development of financial markets, the need for a greater degree of financial inclusion, and the mitigation of risk when it comes to digital finance.

While technology can certainly broaden the reach of financial services, it also tends to increase the scale of the risk that users need to understand. Although there is evidence that financial literacy does reinforce an individual's awareness and use of FinTech products (Morgan and Trinh, 2020), illicit activities involving financial technology, plus the sheer extent of cyber and financial risks, remain a considerable concern in many countries. In the absence of regulations and oversight mechanisms capable of providing reassurance, these risks can potentially erode trust in the digital infrastructure of capital markets.

As with other forms of literacy, there are notable "divides" in this aspect, such as between men and women, urban and rural residents, and small and large firms (Morgan, Trinh and Huang, 2020). This is largely due to disparities in access to digital tools, and in the abilities of people to use these tools. As Quimba, Rosellon and Calizo (2020) have noted, it is possible to look at the digital divide in terms of three key categories: motivational aspects, material considerations, and skills. The authors provide a detailed scoping of these categories based on available data in the context of Asia.

National authorities in Emerging Asia are aware of the challenges at hand, and improvement of financial literacy has been pursued vigorously in the region, with authorities gradually integrating the digital component into their frameworks.[3] Indonesia, Malaysia, and Singapore are already implementing strategies for financial education, all of which are stand-alone projects (OECD, 2019). In Malaysia and Singapore, the base frameworks for this work have been in place since the early 2000s. The OECD (2019) also indicated that, as of 2019, China, the Philippines, and Thailand have been in the process of designing their own strategies, and Brunei Darussalam is planning one too.

The strategies to enhance digital financial literacy in Emerging Asia are generally multi-pronged, and they tend to take effect through various media platforms (Box 4.4). Deducing from the accounts of Yoshino, Morgan, and Wignaraja (2015), specific interventions in countries such as China, India, Indonesia, the Philippines, and Thailand have involved multiple public institutions, as well as private and civic-society groups.

Box 4.4. **Closing gaps in financial education**

Proper financial literacy training must go beyond the basic concepts of opening and using a bank account, budgeting, saving (i.e. compound interest) and credit. Existing financial literacy training initiatives may mention investing, but some must be further enhanced to include clear explanations of how financial instruments such as stocks or bonds work and practical instruction on how to access them. How to open an investment account and make financial transactions with it are examples of these practical skills. Basic information on handling taxes on investments and finding a tax preparer is important so investors can reduce their tax burden and avoid costly penalties arising from tax mistakes. Furthermore, the transition to digital financial services adds yet another layer of complexity as a set of unrelated entry-level digital skills such as how to type, use the basic functions of a computer, or access the Internet is also required. As of 2019, every Emerging Asian country in APEC had or was planning a national financial education strategy including lessons during compulsory education with the exception of Viet Nam (OECD, 2019). However, programmes to reach adults who have left or graduated from the compulsory education system are generally lacking in part because finding the appropriate setting to deliver these programmes may be difficult.

India has released two editions of its *National Strategy for Financial Education* (NSFE) (RBI, 2012 and RBI, 2021). The first NSFE covers the period 2013-2018 and primarily deals with financial concepts including how to establish and operate a bank account, responsible spending, saving, credit, investment, financial instruments and markets, risk and fraud. The first NSFE also acknowledges the need to reach adults, and the need to adapt financial education curriculum for those who are illiterate. The second NSFE (2020-2025) builds on the first, and identifies "process education", such as how to use a debit card, or conduct transactions in securities markets, as a separate learning focus from the related theoretical concepts. The second NSFE also acknowledges the need to regulate financial advisers somewhat, in order to provide a minimum quality to advice given.

India also launched the *Financial Education Programme for Adults* (FEPA) in 2019. The programme covers much of the same material as the school curriculum and is available free of charge and resources are available in a variety of languages spoken in the country. Instruction takes place in a variety of contexts, for instance at the community level or within other adult education programmes or workplaces (National Centre for Financial Education, n.d.). The second NSFE also mentions the value of having financial education messages shown in high traffic areas such as on electronic billboards in transit stations.

Financial services institutions are also becoming involved in financial literacy efforts. Prudential Life Assurance Lao Company Limited ("Prudential Laos") donated ten televisions to schools in **Lao PDR** so students can view the *Cha Ching Programme*, age-appropriate animated videos on basic financial concepts. The programme was originally produced in English, but voice-overs are available for Lao and nine other languages from the Emerging Asia region (Prudential Laos, 2021 and Prudential Corporation Asia, n.d.). However, with the target audience being relatively young children, the idea of investment is not discussed. Visa and the National Bank of **Cambodia** partnered from 2017 to 2020 to provide robust financial literacy training on par with India's programmes in terms of topical breadth and depth, and in line with the NBC's goal of "building [a] sustainable banking system" (Visa, 2017).

Programmes tailored to specific needs may help people who are less likely to be financially literate access training. Commonwealth Bank in **Indonesia** provides WISE (Womenpreneur Indonesia for Sustainability & Empowerment) targeting female entrepreneurs of MSMEs. The WISE programme is conducted through a blend of face-to-face and digital sessions; it is unclear if there is overlap between the face-to-face and digital sessions, but this is something that should be considered for any of these initiatives targeting adults, so they are accessible to as many people as possible. The FEPA in India also has a variety of adapted training courses and materials for many types of special needs.

Looking ahead, and considering the complexity of the issues and the interlinkages between them, integrating the pursuit of digital financial literacy into existing frameworks brings with it some upsides. According to joint analysis from the Alliance for Financial Inclusion and ASEAN, including digital financial literacy in the countries' national strategies for financial inclusion and education can help in a number of ways (AFI and ASEAN WC-FINC, 2021). Firstly, they argue, such an approach can "guide the systematic and harmonised implementation of digital financial literacy with centralised oversight of implementation, stakeholder collaboration and resource allocation", in countries with existing national strategies for financial inclusion and education. Secondly, it can "guarantee the participation of relevant stakeholders at the pre-formulation and formulation phases", in countries that are still developing such strategies. In the case of the latter, they underline the importance of developing national platforms on digital financial literacy to ensure effective collaboration, and to allow individual stakeholders to participate in nationwide interventions. Table 4.3 shows AFI's proposed compartmentalisation of actions, in line with the aforementioned objectives in the context of ASEAN economies.

Table 4.3. **Recommendations for integrating digital financial literacy into national strategies for financial literacy and education**

Phase 1: Pre-formulation	Phase 2: Formulation	Phase 3: Implementation
1. Conduct diagnostics and collect relevant data to inform the development of DFL strategies and/or programmes 2. Undertake a review of existing national strategies and relevant policy instruments, and conduct mapping exercises 3. Identify DFL objectives and competencies to be addressed	1. Engage with relevant stakeholders and design strategic partnerships 2. Establish DFL within governance structures 3. Integrate DFL objectives into the national strategy 4. Determine target groups and their needs 5. Resource planning and budget 6. Establish monitoring and evaluation mechanisms	1. Co-ordinate the stakeholders and secure regular feedback within the governance/ oversight structure 2. Design relevant and well-defined interventions/programmes 3. Use appropriate, innovative, and effective delivery channels for DFL outreach 4. Conduct monitoring and evaluation
MONITORING and EVALUATION		

Note: DFL means digital financial literacy.

Source: Adapted from AFI and ASEAN WC-FINC (2021).

In order to make policy interventions more inclusive, it is crucial for national authorities to identify gaps in them by systematically collecting data, and by incorporating this information into the design and execution of their programmes. Furthermore, as Morgan, Trinh and Huang (2020) have suggested, citing OECD (2019), a national co-ordinating council can have a range of substantial merits, beyond simply involving a wide range of stakeholders. These include establishing a roadmap to support the achievement of specific and pre-determined objectives, providing guidance on the implementation of individual programmes under the national strategy, and incorporating monitoring and evaluation processes for progress assessment.

At the regional level, recent co-operation efforts have also put more of a premium on financial literacy. As noted by the UNICEF East Asia and Pacific Regional Office (2021), ASEAN education ministers recently agreed in principle to pursue a stronger development of digital literacy skills for young people, and there is also plan to integrate digital literacy into ASEAN's education work plan for 2021-25. In August 2021, meanwhile, ASEAN's Business Advisory Council hosted a round table event on FinTech and financial literacy, a further sign of the increasing emphasis that the region is placing on financial literacy (ASEAN-BAC Secretariat, 2021).

Effective macroprudential policy stabilises financial markets

The stability of financial markets is critical for the sustainable development of capital markets and the use of market-based instruments. Indeed, the global financial crisis of 2007-08 and its aftermath led to a new emphasis on macroprudential policy as a means of addressing systemic risk. Indeed, it became clear after that crisis that microprudential policy alone could not cope with system-wide financial distress. In light of adverse developments in the build-up to both the Asian and the global financial crises, authorities in Emerging Asia enacted a range of macroprudential measures to ensure the stability of the financial system as a whole, to increase banks' resilience to shocks, and to reduce the accumulation of systemic risk.

Table 4.4. **Overview of current macroprudential measures in selected economies in Emerging Asia**

	Brunei Darussalam	Cambodia	China	India	Indonesia	Lao PDR	Malaysia	Philippines	Singapore	Thailand	Viet Nam
Capital buffers and other capital requirements											
Basel III counter-cyclical capital buffer			●	●	●		●	●	●	●	
Basel III capital conservation buffer			●	●	●		●		●	●	
Other capital requirements[1]			●	●			●	●		●	
Measures targeting the leverage of banks											
Basel III leverage ratio			●	●	●		●	●	●		
Requirements on loan-loss provisioning											
Dynamic provisioning			●	●				●			
Measures targeting liquidity, foreign exchange exposures, and currency mismatches											
Liquidity ratios[2]		●	●	●	●		●	●	●		
Limits to the loan-to-deposit ratio					●						
Limits on foreign exchange positions[3]		●		●	●	●					
Limits on credit growth and volume, and other restrictions on loan characteristics											
Limits on the growth and volume of credit[4]	●		●	●							●
Other restrictions on loan characteristics[5]	●	●	●		●		●	●	●		
Borrower-based measures											
Limits to loan-to-value ratios[6]	●		●	●	●		●	●	●	●	
Limits to debt-service-to-income ratio or loan-to-income ratio[7]	●		●	●			●		●	●	
Other measures with a macroprudential character											
Taxes applied to transactions, assets or liabilities			●				●		●		
Reserve requirements for macroprudential purposes	●	●	●	●	●		●	●			
Other measures[8]	●								●		

Notes: Data are as of 14 October 2021. Data for Myanmar are not available.
1. Including risk weights, systemic risk buffers and minimum capital requirements.
2. Including liquidity coverage ratios, liquid assets ratios, net stable funding ratios, core funding ratios and external debt ratios that do not distinguish between currencies.
3. Including limits on net or gross open foreign exchange positions, limits on foreign exchange exposures and foreign exchange funding, and restrictions on currency mismatches.
4. Including limits on the growth and volume of aggregate credit, credit to the household sector, credit to the corporate sector, and penalties for high credit growth.
5. Including limits on loan maturity, size and type of interest rate, or restrictions depending on bank characteristics (e.g. mortgage banks).
6. Including loan-to-value ratios targeted at housing loans, consumer loans, and commercial real estate loans.
7. Including debt service-to-income and loan-to-income limits targeted at housing loans, consumer loans, and commercial real estate loans.
8. Including limits on single-client exposures, or other restrictions on housing loans.
Source: OECD (2021b).

Several macroprudential policy instruments are currently embedded in various pieces of national legislation across the region, transposing the Basel III reform package. Several changes in macroprudential regulation have occurred, in particular in the aftermath of the global financial crisis. As part of this global trend, policy makers in Asian countries have come under considerable pressure to raise prudential standards, and a wide range of macroprudential measures is now in place in Emerging Asian countries (Table 4.4).

The macroprudential policy toolkit is comprised of a wide variety of instruments, most notably in China, India, Malaysia, the Philippines and Singapore. By contrast, policy makers in Lao PDR have focused mostly on tackling risks that stem from foreign-exchange exposures, while in Viet Nam they have focused mostly on credit growth. On an aggregate level, the macroprudential stance in Emerging Asia has, for the most part, undergone a tightening in recent years (OECD, 2021b).

Several challenges to the effective conduct of macroprudential policy continue to confront Emerging Asian countries, and these have received a more detailed treatment in OECD (2021b). The conduct of macroprudential policy, and the extent to which these challenges are more significant in one country than in another, is likely to be influenced by the structure of each country's financial system, and by the institutional set-up as regards macroprudential policy. First, there are very significant differences among Emerging Asian countries in terms of the size and structure of the financial sector. In 2016, the size of the overall financial sector, which is defined in this case as the ratio of total financial assets to gross domestic product (GDP), stood at almost 900% of GDP in Singapore. Other countries with a financial sector greater than domestic GDP are Malaysia (2.4 times) and Thailand (2.6 times). At the other end of the spectrum, the size of the financial sector in Indonesia stood at 51% at the end of 2016 (OECD, 2021b). Second, the institutional setup also differs among countries in Emerging Asia. The dominant kind of macroprudential institutional setup in the region is the central bank-based model. However, in Indonesia, the Philippines and Thailand, the responsibility for conducting macroprudential policy is shared between the central bank and other designated authorities (OECD, 2021b).

A first and major challenge pertains to measuring the macroprudential stance and calls for the development of a well-defined and stable framework. Second, macroprudential and monetary policy are inter-related, which renders complex any assessment of the effectiveness of the former. Third, macroprudential policy frameworks require further strengthening in order to account better for increased inter connections between bank and non-bank intermediaries. Fourth, macroprudential policy makers must give due consideration to the cross-border effects of domestic macroprudential policy, and should envisage greater co-operation in order to limit these spillovers. Fifth, macroprudential policy must be optimally targeted to avoid an issue of moral hazard. Finally, the conduct of macroprudential policy must give due consideration to the legacy of the COVID-19 crisis.

Capital requirements are typically considered an effective regulatory option to address some of these challenges, by increasing banks' capacity to absorb losses during an economic downturn and maintaining the financial system's resilience. It is also commonly agreed that improving supervisory regimes is paramount for reducing the probability of default for banks overall and systemically important institutions in particular. Emerging Asian countries are, however, noticeably absent from the Basel Committee, which could lead to

lax and unenforceable bank regulation for underdeveloped banking systems. In addition, stress tests could provide key insights for the implementation of ex ante measures, aimed at reducing the probability and impact of a default.

Macroprudential policy has improved financial stability in Emerging Asia, and must preserve it in the wake of the COVID-19 crisis

The over-arching goal of macroprudential policy is to contain the build-up of vulnerabilities in the financial sector that could generate crises, or that could exacerbate the impact of an initial shock and then lead to more widespread financial stress. Prior to implementing new macroprudential measures or amending existing ones, it is always crucial for policy makers to conduct a thorough impact assessment. The academic literature has devoted ample attention to the effects of macroprudential policies on financial stability. There is consensus in both the theoretical and empirical literature that macroprudential policy improves financial stability. Table 4.5 provides examples of empirical evidence on the effectiveness of macroprudential policies in Emerging Asia. A more detailed discussion is provided in the following paragraphs and in OECD (2021b).

Some studies have tried to answer the question of whether capital requirements affect credit supply and risk-taking behaviour at banks in Emerging Asia. With respect to the impact on credit growth, Lee, Asuncion and Kim (2015) provide compelling empirical evidence to support the view that capital-related policies targeting credit expansion in India had the desired effect of moderating a credit boom there. In a study of Viet Nam's experience with the Basel II capital requirements, meanwhile, Phi et al. (2019) find that, at the bank level, a tightening of regulatory capital requirements does not induce a higher lending rate in the long term. This notwithstanding, Kim, Kim, and Mehrotra (2019) show in a cross-country study of 11 Asian economies over the period 2000-14 that contractionary macroprudential policy shocks have negative effects on credit.

As regards risk-taking behaviour by Asian banks, Chalermchatvichien, Jumreornvong, and Jiraporn (2014) studied the association between the Basel III capital standards and risk-taking, drawing on a sample of East Asian banks for 2005-09. The results show that an improvement in capital stability by one standard deviation diminishes the extent of banks' risk-taking by 5.37%. Elsewhere in the literature, Lee and Hsieh (2013) apply the Generalised Method of Moments technique for dynamic panels, using bank-level data for 42 Asian countries over the period 1994-2008, in order to assess the impact of bank capital requirements on profitability and risk. In so doing, they find that the impacts on profitability and risk are heterogeneous among different types of banks. Investment banks display the lowest and most positive capital effect on profitability, while commercial banks reveal the largest reverse capital effect on risk. Furthermore, the distinction between banks in low-income countries and those in lower-middle income countries shows that the former show a higher capital effect on profitability, while the latter exhibit the highest reverse capital effect on risk.

Although they are less numerous, some studies have focused in particular on exploring the impact of macroprudential tools other than capital requirements on the behaviour of Emerging Asian banks. For example, Zhang and Zoli (2016) compiled various macroprudential policy indices for 13 Asian economies (including China, India, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam), plus 33 economies in other regions, over

the period of 2000-13. They evaluated the effects of macroprudential policy through several methods, namely an event study, cross-country macro- panel regressions, and bank-level micro panel regressions. The results indicate that housing-related macroprudential measures, and in particular loan-to-value caps and housing-tax measures, have helped to curb housing price growth, credit growth, and bank leverage in Asia (Zhang and Zoli, 2016). Similar results emerged as regards the effectiveness of loan-to-value and debt-to-income caps in Korea (Jung, Kim and Yang, 2017; Igan and Kang, 2011).

Table 4.5. **Selected empirical evidence on the impact of macroprudential policies on financial stability in Emerging Asia**

Study title	Sample economies	Types of macroprudential tools considered	Main conclusion(s)
Igan and Kang (2011)	Korea.	Loan-to-value (LTV) caps; debt-to-income DTI caps.	LTV and DTI caps are associated with a decline in house price growth; LTV and DTI caps alter expectations, which play a key role in bubble dynamics.
Lee and Hsieh (2013)	42 Asian economies, including Cambodia, China, India, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand and Viet Nam.	Capital requirements.	The impacts of capital requirements are heterogeneous among different types of banks. Investment banks display the lowest and most positive capital effect on profitability, while commercial banks reveal the largest reverse capital effect on risk.
Chalermchatvichien, Jumreornvong and Jiraporn (2014)	China, Hong Kong, China, Japan, Korea, India, Indonesia, Malaysia, the Philippines, Singapore, Sri Lanka, and Thailand.	Capital requirements.	An improvement in capital stability diminishes the extent of banks' risk-taking behaviour.
Lee, Asuncion and Kim (2015)	India.	Capital requirements.	Capital-related policies targeting bank credit expansion have achieved the desired effect of moderating a credit boom.
Zhang and Zoli (2016)	46 Asian and non-Asian economies, including China, India, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam.	Various housing-related and non-housing-related macroprudential tools.	Housing-related macroprudential policies – in particular LTV caps and housing tax measures – have helped to curb housing-price growth, credit growth and leverage in Asia.
Jung, Kim and Yang (2017)	Korea.	LTV caps; DTI caps.	LTV and DTI caps have a significant and persistent effect on real household credit and real house prices.
Cantu, Gambacorta and Shim (2019)	Five Asia-Pacific economies, including Indonesia, the Philippines and Thailand.	Various housing-related and non-housing-related macroprudential tools.	Macroprudential policies are effective in reducing excessive household credit growth. Moreover, macroprudential policy tightening has a stronger effect than an easing. In addition, banks' size and liquidity influence the effect of macroprudential policy on credit growth. Finally, macroprudential policy is effective in reducing bank risk, as proxied by the non-performing loan ratio.
Kim, Kim and Mehrotra (2019)	China, India, Indonesia, Hong Kong, China, Japan, Korea, Malaysia, the Philippines, Singapore, Chinese Taipei, and Thailand.	Various housing-related and non-housing-related macroprudential tools.	Macroprudential tightening shocks have a significant negative effect on credit growth and output.
Phi et al. (2019)	Viet Nam.	Capital requirements.	A tightening of capital requirements does not lead to higher lending rates in the long-run.

Source: Authors' elaboration based on OECD (2021b) and the papers cited above.

Rather than focusing on individual macroprudential policy tools, meanwhile, Cantu, Gambacorta and Shim (2019) used quarterly bank-level data combined with a macroprudential policy index to assess the effectiveness of various macroprudential policies in five countries in the Asia-Pacific region (Australia, Indonesia, New Zealand, the Philippines and Thailand). They distinguished between tightening and loosening policies, differentiating between macroprudential measures depending on whether they were implemented to respond to cyclical conditions, or to enhance resilience. Several important results emerge from the study. First, macroprudential policies are shown to be effective in reducing the growth of household credit. Second, the study demonstrates that bank characteristics play an important role in the transmission of macroprudential policies, with larger banks and those with higher liquidity buffers less sensitive to a policy change. Third, the authors report asymmetric effects in the implementation of macroprudential policies, in the sense that a tightening action has a stronger effect on credit growth than a loosening one. Another important result is that macroprudential policies are effective in reducing bank risk, for which the share that non-performing loans represent of total loans is the proxy (Cantu, Gambacorta and Shim, 2019).

The COVID-19 crisis has important implications for the conduct of macroprudential policy

As Bergant and Forbes (2021) have argued in a recent study, the COVID-19 outbreak has been the first test for many countries of how changes in their macroprudential framework would perform during a severe, negative shock. Elsewhere in the recent literature, Le Quang and Scialom (2021) have argued that current macroprudential regulation is not adequate to deal with risks whose origin lies outside financial markets, such as pandemic risk. Macroprudential authorities in Emerging Asia responded differently during the COVID-19 shock compared to two other recent shocks, namely the taper tantrum and the commodity price shock (Table 4.6). During the first half of 2020, which corresponded to the height of the COVID-19 shock, a number of Emerging Asian countries temporarily eased some macroprudential constraints that could have impeded the provision of credit to the economy. For instance, Malaysia and India temporarily relaxed liquidity requirements, while Indonesia, Malaysia, the Philippines, Singapore and Thailand loosened other types of measures that have a macroprudential character (OECD, 2021b). At the same time, macroprudential authorities maintained capital buffer requirements unchanged during the COVID-19 shock, in an effort to preserve the strength of the banking sector (Table 4.6).

Notwithstanding its potential benefits, an easing of macroprudential policy during periods of stress does involve trade-offs. In the context of the COVID-19 crisis, it is mostly uncertainty surrounding the outlook, in particular with regard to measures to curb the spread of the disease, but also with regard to policy support measures, that has shaped these trade-offs. Yet despite trade-offs and uncertainties, swift and decisive action in the form of relaxing certain macroprudential requirements is seen as more appropriate than a wait-and-see strategy when the provision of credit to the real economy begins to falter (Nier and Olafsson, 2020). However, under certain circumstances, early macroprudential policy easing may yield lesser benefits. This is the case, for example, when the persistence of public health measures, or of other, exogenous, factors that have a negative impact on demand, offset the full impact on the real economy from additional credit. Under such a scenario, a later policy easing may help to forestall a more costly cutback in credit (Nier and Olafsson, 2020).

Table 4.6. **Macroprudential policy loosening in Emerging Asia during the economic shocks of the taper tantrum, commodity prices, and COVID-19**

Country	Taper tantrum shock		Commodity price shock		COVID-19 shock	
	Capital buffers	Other types of tools	Capital buffers	Other types of tools	Capital buffers	Other types of tools
Brunei Darussalam						
Cambodia						
Indonesia				Loosening		Loosening
Lao PDR						
Malaysia						
Philippines						Loosening
Singapore						Loosening
Thailand						Loosening
Viet Nam						
China				Loosening		Loosening
India		Loosening		Loosening		Loosening

Note: Data are as of 1 March 2022. Data for Myanmar are not available. The taper tantrum shock is defined as the period comprised between Q2 2013 and Q4 2013, during which the yield on 10-year US Treasuries rose from around 2% to around 3%. The commodity price shock is defined as the period between Q2 2014 and Q1 2015, when oil prices nearly halved. The COVID-19 shock is defined as the first six months of 2020. Cells with a green background indicate that at least one macroprudential policy loosening took place during the reference period; cells with an orange background indicate that no macroprudential policy loosening took place during the reference period.

Source: Authors' elaboration based on Bergant and Forbes (2021), OECD (2021b), Alam et al. (2019) and national sources.

Macroprudential authorities also face a trade-off between providing banks further capacity so that they can engage in additional lending, and preserving the stability of the financial sector. In this respect, it is crucial for policy makers to give special attention to the interactions between the financial sector and the real economy (OECD, 2021b). The importance of these interactions has resurfaced during the COVID-19 crisis. A protracted decline in economic activity, in particular in the sectors that the pandemic-related restrictions have impacted the most, risks magnifying the probability that households and firms that are involved in those sectors will default on their debts. In turn, this could weaken the balance sheets of banks and other financial intermediaries, and thus undermine financial stability (Didier et al., 2021; Mirza et al., 2020).

The amount of room for manoeuvre that policy makers have to adjust or expand policy can also shape trade-offs when it comes to macroprudential policy. During the COVID-19 crisis, macroprudential tools have been used counter-cyclically, in order to help stabilise economies and financial markets. As Bergant and Forbes (2021) have argued, policy headroom, as determined by the level of policy tightening prior to COVID-19, was a significant constraint on countries' ability to use macroprudential policy as part of their overall policy-support toolkit during the outbreak of the pandemic. However, and as the same study showed, the amount of room for manoeuvre that policy makers had to use other tools such as fiscal and monetary policy, foreign-exchange interventions, or capital-flow management measures, did not significantly affect their scope to use macroprudential tools. At the same time, the available macroprudential policy space did not have a significant impact on public authorities' recourse to other policy tools. As a result, Bergant and Forbes (2021) suggest that macroprudential tools should be better integrated with other policies going forward. Elsewhere, Padhan and Prabheesh (2021) draw similar conclusions. They argue in favour of a co-ordination of macroprudential, monetary, and fiscal policies, in order to mitigate the effects of COVID-19.

Additionally, the stabilisation of cross-border capital flows may gain a new dimension in the aftermath of the COVID-19 crisis. The divergence in economic performance between advanced and emerging economies in the aftermath of the COVID-19 crisis is likely to lead to an increase in the volatility of capital flows for most Emerging Asian countries. In a recent paper, Ferriani (2021) uses the event study methodology to assess fund flows to emerging-market economies during major crisis episodes that occurred between 2012 and 2020. Namely, these are the so-called taper tantrum in 2013, the Chinese stock-market turbulence and sell-off in 2015, the 2016 presidential election in the United States, the 2018 emerging-market sell-off, and the COVID-19 crisis. This paper concludes that emerging-market economies remain highly exposed to an abrupt increase in global risk aversion, with investors triggering larger-than-anticipated abnormal flows in the aftermath of each event. The results are shown to be particularly economically significant for the taper tantrum and the COVID-19 pandemic. Therefore, the question arises as to how effective macroprudential policies can be in safeguarding countries from volatile capital flows that are triggered by global factors.

Macroprudential measures can affect the nature and volume of cross-border capital flows by influencing the composition of banking-system balance sheets, both on the assets and the liabilities sides. On the asset side, macroprudential regulations that guard against high concentration in banks' bond portfolios would reduce the risk of excessive exposures to individual issuers or sectors. For instance, regulators could mandate that the bond holdings of banks be sufficiently diversified, including by placing limits on the exposure to any individual sovereign issuer. On the liability side of banks' balance sheets, meanwhile, a regulatory approach that discourages excessive wholesale funding would effectively reduce the scale of cross-border debt inflows during boom periods, given that cross-border debt flows are mostly inter-bank flows. However, there is some risk of regulatory arbitrage to the extent that direct cross-border lending may partially offset this. Such regulatory arbitrage could be tackled through co-operation between home-country supervisors of foreign banks, as facilitated by the Basel III reform package (Borio, McCauley, and McGuire, 2011).

While large and volatile capital inflows can be a source of systemic risk, the academic literature in this field does not provide widespread evidence that macroprudential policy is effective in reducing foreign capital inflows. Nonetheless, some studies suggest that macroprudential policy can affect capital flows. Bruno, Shim and Shin (2017) provide some evidence that targeted macroprudential policies are effective in moderating banking and bond inflows to the Asia-Pacific region. Elsewhere, and drawing on a sample of 38 emerging markets, including China, India, Indonesia, Malaysia, the Philippines and Thailand, Bergant et al. (2020) also show that a tighter level of macroprudential regulation reduces the sensitivity of GDP growth to capital-flow shocks. Relatedly, Beirne and Friedrich (2014) conclude that macroprudential policy can, depending on the structure of the domestic banking sector, effectively reduce capital flows. Meanwhile Devereux and Yu (2019) suggest that macroprudential policies are essential in a pegged exchange rate regime. Conversely, Lepers and Mehigan (2019) find no evidence that macroprudential measures alter capital inflows, while currency-based measures (in particular foreign-exchange reserve requirements and foreign-exchange lending regulations) may reduce both inflows and credit growth.

Finally, the COVID-19 crisis highlights the importance of regional and international co-operation in the area of macroprudential policy. Policy makers in Emerging Asia and around the world intervened in a relatively synchronised way to mitigate the impact of the economic fallout from COVID-19, by exploiting the flexibility of existing regulatory frameworks. By contrast, when determining the extent and the timing of policy normalisation, different countries' future macroprudential actions may be out of step with each other. Future decisions must take into account disparities among banking sectors, the severity of the recession, and the nature of policy support programmes implemented via the banking sector. Macroprudential policy decisions will be even more complex in economies where the recovery is slower. Given the cross-border spillover effects of domestic macroprudential measures, which are potentially amplified by frictions in the banking sector, regional or international co-ordination of macroprudential policy may be all the more necessary (OECD, 2021b).

Conclusion

In order to facilitate the development of market-based financing tools for their recovery from the COVID-19 pandemic, Emerging Asian economies need to address several challenges. Developing the bond market is a vital part of the equation. As things stand, however, while Emerging Asia's bond markets have deepened substantially over the years, they remain uneven and, in some cases, restrictive.

In developing bond markets further, identifying and addressing the prevailing structural constraints is of paramount importance. Meanwhile, continuously ensuring robust market infrastructures and post-trading mechanisms is equally important. Furthermore, increasing sovereign issuance across the entire maturity spectrum can improve the price-discovery process, and thus increase both liquidity and investor participation in the market for sovereign bonds.

In addition, countries in Emerging Asia have substantial scope to improve financial literacy. Notably, financial literacy has also become more intertwined with digital literacy. As such, coming up with consistent, comprehensive, and evidence-based national frameworks for digital financial education and inclusion cannot be over-emphasised in its importance. It is also important to identify and close the gaps between segments of society in terms of their access to information and digital tools.

In order to support the development of capital markets in an appropriate manner, macroprudential policy frameworks should be in step with prevailing conditions. In the two decades and more since the Asian financial crisis, it is true that countries in Emerging Asia have implemented various measures that have contributed to their stability during the crises that have ensued, including the ongoing COVID-19 pandemic. Nevertheless, it is crucial for policy makers to remain vigilant in monitoring potential sources of systemic risk, and to stand ready to act in the event of a threat to financial and economic stability. At the same time, a constant exploration of avenues for potential cross-border financial co-operation is critical to strengthening the buffers against risks.

Notes

1. The Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) includes central banks from the following countries: Australia, China, Hong Kong (China), Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore and Thailand.
2. The OECD Adult Financial Literacy Survey separates financial literacy into three components: knowledge, behaviour, and attitude. Adequate financial literacy benefits individuals by helping them to achieve financial well-being. A maximum score of 21 indicates that the respondent has achieved a basic understanding of financial concepts, and that the person applies this knowledge to their financial dealings. The 2020 survey results have already been released, but among Emerging Asia economies only Indonesia, Malaysia, and Thailand were included. Furthermore, the 2020 results are not comparable to the 2016 results.
3. Moenjak, Kongprajya and Monchaitrakul (2020), for instance, discuss the ways in which Thailand's approach to improve financial literacy in the country incorporates FinTech.

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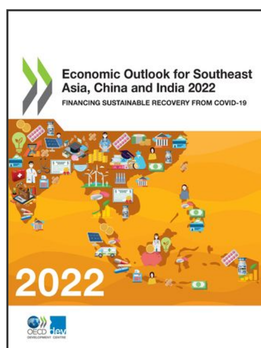

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